

I031077

**From:** McMillin, Stella@Wildlife  
**To:** [County Ag Commissioner, Marin](#); [Palmer-Townsend, Marilyn@CDPR](#); [Kratville, David@CDFA](#); [Miller, Robert](#)  
**Subject:** Loss report for barn owl in Marin County  
**Date:** Tuesday, July 03, 2018 6:32:09 PM  
**Attachments:** [P3272.pdf](#)

---

Hello, Please find attached a loss report for a barn owl in Marin County. If you have any questions, please contact me.

Thank you.

Stella McMillin  
Senior Environmental Scientist  
California Department of Fish and Wildlife  
Wildlife Investigations Laboratory  
1701 Nimbus Road  
Rancho Cordova, CA 95670  
Office 916-358-2954  
Cell 916-531-9683



**DEPARTMENT OF FISH AND WILDLIFE**  
**WILDLIFE BRANCH**  
**WILDLIFE INVESTIGATIONS LABORATORY**  
**PESTICIDE INVESTIGATIONS**  
1701 NIMBUS ROAD  
RANCHO CORDOVA, CA 95670  
PHONE (916) 358-2954

---

**Lab Number P-3272**  
**Necropsy Z18-0141**  
**CAHFS Number D1803236**

**Date of loss: February 17, 2018**  
**Sample: Barn owl**  
*Tyto albens*  
**Protection status: Migratory Bird**  
**Treaty Act**

**To: Stacy Carlsen**  
**Marin County Agricultural Commissioner**

**Report Date: May 11, 2018**

**Remarks**

Probable anticoagulant rodenticide intoxication in barn owl.

**Background**

On February 17, 2018, a freshly dead barn owl carcass was found on a lawn in a backyard in Tiburon. There were small traces of blood on the feathers and abdomen but no signs of trauma. It was submitted to the CDFW Wildlife Investigations Laboratory (WIL) to determine cause of death.

-001

---

**RESULTS OF EXAMINATION**

---

A necropsy was performed by WIL on March 6, 2018. The owl was an adult female in good nutritional condition. There was blood on both feet and on the abdomen. Maggots were present in the left eye and mouth. There was bruising and a small laceration on the 4<sup>th</sup> digit of the right foot and a 0.05 cm scab on the keel. Mucosa, lungs, intestine and esophagus were light pink. The skull and brain also appeared pale. The stomach was empty. The liver appeared slightly enlarged with a small tear with hemorrhage on the right lobe. This finding is consistent with trauma from falling. The liver contained 0.071 ppm brodifacoum, 0.47 ppm diphacinone and traces of bromadiolone and difethialone.

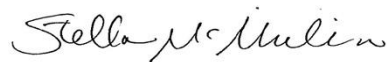
Brodifacoum, bromadiolone, and difethialone are California restricted materials used for commensal rodent control and diphacinone is available to the public for commensal rodent control, as well as certified applicators for field rodent control. Signs of intoxication have been found when anticoagulant rodenticide liver concentrations are above 0.1-0.2 ppm (Thomas et al 2011). In laboratory studies with screech owls, signs of coagulopathy were observed in 90% of individuals with liver diphacinone concentrations of 0.361-0.638 ppm (Rattner et al. 2014). Given the coagulopathy observed at necropsy and the potentially toxic concentration of diphacinone and brodifacoum in the liver, it is probable that the owl died of anticoagulant intoxication.

References:

Rattner, B.A., K.E. Horak,, R.S. Lazarus, D.A. Goldade, J.J. Johnston. 2013. Toxicokinetics and coagulopathy threshold of the rodenticide diphacinone in eastern screech-owls (*Megascops asio*). Environmental Toxicology and Chemistry 33(1): 74-81.

Thomas, P.J., P. Mineau, R.F. Shore, L. Champoux, P.A. Martin, L.K. Wilson, G. Fitzgerald, and J.E. Elliot. 2011. Second generation anticoagulant rodenticides in predatory birds: Probabilistic characterization of toxic liver concentrations and implications for predatory bird populations in Canada. Environment International 37: 914-920.

**WILDLIFE INVESTIGATIONS LABORATORY**



**Stella McMillin, Senior Environmental Scientist  
Wildlife Investigations Laboratory**

**Approved**



**Dr. Deana Clifford, Senior Wildlife Veterinarian,  
Wildlife Investigations Laboratory**

**Cc: Marilyn Palmer-Townsend,  
CDPR**

**David Kratville,  
CDFA**

**Robert Miller,  
USEPA**